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March 20, 2019

VIA ELECTRONIC MAIL AND
REGULAR U.S. MAIL

Aida Camacho-Welch, Secretary
New Jersey Board of Public Utilities
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Re: New Jersey Energy Storage Analysis
Request for Comments by March 20, 2019

Dear Secretary Camacho-Welch:

Jersey Central Power & Light Company (“JCP&L” or the “Company”) is pleased to submit comments in response to the March 6, 2019 request issued by the New Jersey Board of Public Utilities (“Board”) Staff seeking stakeholder input on preparation of the Energy Storage Analysis (“ESA”) required by P.L. 2018, c. 17 (the “Act,” codified in relevant part as N.J.S.A. 48:3-87.8).

JCP&L thanks the Board and Board Staff for the opportunity to provide these comments. The Company offers these comments both to assist the Board with preparing the required ESA and to provide its insights on how New Jersey’s energy storage policies can be developed to benefit the state’s grid and customers.

1. How might the implementation of renewable electric energy storage systems benefit ratepayers by providing emergency back-up power for essential services, offsetting peak loads, providing frequency regulation and stabilizing the electric distribution system?

The strategic deployment of energy storage technology on the transmission and distribution systems of electric distribution companies (“EDCs”) can have a positive impact on service quality and the reliability of their systems. This positive impact can result from strategic deployment of all different kinds of energy storage resources and not just renewable electric energy storage systems. In addition to the benefits storage technology can provide as an emergency back-up power source to support transmission or distribution system operations, it also provides benefits as a voltage regulation tool. Like other advanced distribution system infrastructure, storage technology can respond instantaneously to changes in voltage, resulting in a more stable, reliable distribution grid. Indeed, appropriately managed storage technology can play a role in regulating the voltage on the EDCs’ distribution systems as distributed energy resources (“DERs”) deploy and inject excess electricity onto the grid. Energy storage technology can also play a role in

potentially improving voltage profiles during periods of high loading and reducing peak demand on transmission or distribution equipment. In short, the strategic deployment of energy storage technology can benefit the EDCs' transmission or distribution systems and has the potential to benefit their customers.

New Jersey's EDCs are in the best position to optimize the value their customers may realize from the deployment of energy storage technology as a transmission and distribution asset. The key is strategic integration of these technologies. Customers benefit most from energy storage technology when it is strategically placed onto the EDCs' transmission and distribution systems to increase reliability and defer otherwise necessary investment in upgraded infrastructure. The expertise and knowledge the EDCs' possess of their unique systems make them best-suited to identify the areas where these strategic investments will provide the most benefits to their customers. As such, the Board should recognize the vital role the EDCs will play in optimizing the benefits customers realize from New Jersey meeting its energy storage objectives.

2. How might the implementation of renewable electric energy storage systems promote the use of electric vehicles in New Jersey, and what might be the potential impact on renewable energy production in New Jersey?

A future with widespread electrification, including extensive use of electric vehicles, could benefit from energy storage available on the distribution system. Energy storage is a versatile resource that can be used for multiple purposes. For example, it could possibly be used to provide flexibility that is needed to accommodate increases in load during peak and non-peak hours, assisting with increased load due to electrification generally and the electrification of the transportation sector specifically.

3. What types of energy storage technologies are currently being implemented in New Jersey and elsewhere?

According to the Department of Energy's Global Energy Storage Database, only a limited number of grid-connected energy storage resources are currently operational in New Jersey.¹ Yards Creek storage facility, which is jointly owned by JCP&L and Public Service Enterprise and Gas, is the largest energy storage facility in the state, with three (3) 140 megawatt pumps/turbines that can produce 420 megawatts for approximately five (5) hours.

4. What might be the benefits and costs to ratepayers, local governments, and electric public utilities associated with the development and implementation of additional energy storage technologies?

As detailed in its response to Question 1 above, JCP&L believes the further deployment of energy storage technology has the potential to benefit both the EDCs' systems and their customers. The key to maximizing this benefit for the EDCs' customers is the strategic integration of energy storage technologies. The EDCs are in the best position to identify areas where such deployments

¹ Global Energy Storage Database, Department of Energy Office of Electricity Delivery and Energy Reliability, available at <https://energystorageexchange.org/projects?q=new+jersey> (last visited Mar. 15, 2019).

can provide the most benefit to their customers at the least cost. While the specific benefits realized by ratepayers, local governments, and EDCs vary somewhat depending on their needs, all will benefit from allowing the EDCs to play a primary role in maximizing the value-proposition provided by the deployment of energy storage technology.

5. What might be the optimal amount of energy storage to be added in New Jersey over the next five years in order to provide the maximum benefit to ratepayers?

As discussed above, the key to maximizing the benefits of energy storage technology is the strategic integration of it into the EDCs' transmission and distribution systems. Accordingly, the optimal amount of energy storage to be added in New Jersey is dependent on the unique needs of each EDC. Detailed studies would need to be performed by each of the EDCs to definitively determine the optimal amount of energy storage to be integrated into their individual systems.

6. What might be the optimum points of entry into the electric distribution system for distributed energy resources (DER)?

In JCP&L's experience, the optimal points of entry for DERs onto its system are along main-line infrastructure (consisting of three-phase, heavy-gauge wire). DER installations in these areas have reduced connection costs because less reconfiguration of the Company's facilities is required to allow for the DER's injection of additional electricity onto the grid.

7. What might be the calculated cost to New Jersey's ratepayers of adding the optimal amount of energy storage?

As discussed above, the optimal amount of energy storage depends largely on the unique needs of each of the EDCs' transmission and distribution systems. JCP&L projects that the cost of strategically installing energy storage with a capacity totaling approximately 1-2% of the Company's total peak demand would be, at a minimum, in the hundreds of millions of dollars. Additionally, there would be significant costs for the continued maintenance of energy storage technologies after installation.

8. What might be the need for integration of DER into the electric distribution system?

Meeting the evolving needs and changing expectations of consumers (including their adoption of new technologies) requires a modern electric grid that is intelligent, flexible, and secure. For grid modernization to occur, distribution platform enhancements that include utility smart grid technology are necessary. These upgrades will improve system resiliency and reliability, benefitting customers in the near term, while providing the bridge to implementation of more advanced smart grid technologies and DER. The Board and EDCs can work together to ensure the electric distribution systems are well-equipped to handle the increased integration of DERs into the electric distribution system. This includes appropriate cost recovery mechanisms to encourage and attract investment.

9. How might DER be incorporated into the electric distribution system in the most efficient and cost-effective manner?

Much like with the deployment and integration of energy storage technologies, New Jersey's EDCs are in the best position to increase the value customers realize from DERs by ensuring their efficient and cost-effective incorporation into the EDCs' systems. When sited at optimal locations and owned and operated by the EDC, DERs can provide benefits to the distribution grid, including reducing peak load, providing voltage support, improving reliability and resiliency, and reducing line losses. Additionally, as mentioned previously, these benefits can be further extended by coupling the DER with energy storage to mitigate the impact caused by the intermittent nature of the DER. DERs can also be used by EDCs to benefit their transmission systems by providing frequency regulation to stabilize the grid during contingencies. In all cases, the EDCs and their customers receive greater benefit from the deployment of DERs by allowing the EDCs to drive their development based on the unique needs of their systems.

10. In the context of the ESA, what might be the definition of Energy Storage?

For purposes of preparing the ESA, JCP&L proposes that the Board look at all energy storage resources in the state. This is consistent with the language of the Act, which does not distinguish between different types of energy storage resources or the time at which the resource was installed. Generally, energy storage refers to infrastructure that allows for the on-demand absorption and release of electrical energy into the electric grid in parallel. JCP&L recommends that the Board be guided by this general understanding of energy storage for purposes of the ESA. Examples of energy storage resources include pumped-hydro storage systems, compressed-air energy storage, compressed gas storage systems, battery-based AC energy storage systems, flywheels, and electrochemical capacitors – to name a few. These different energy storage resources can all provide benefits to the electric grid and the EDCs' customers and, accordingly, should be considered as part of the ESA.

11. What discharge time duration could be applied to the State goals of 600 MW of energy storage by 2021 and 2,000 MW of energy storage by 2030? Four hours? Ten hours? Other?

The appropriate discharge time duration to be considered for an energy storage resource depends on the functional purpose for which that resource is operating. Accordingly, this question cannot be answered definitively without knowing the function the various energy storage resources will be performing.

12. What storage systems should be counted towards the achievement of the State's goal?

As mentioned previously, the Act does not distinguish between the different types of energy storage resources that have been discussed herein. Rather, the Act requires the Board to "initiate a proceeding to establish a process and mechanism for achieving the goal of 600 megawatts of energy storage by 2021 and 2,000 megawatts of energy storage by 2030." N.J.S.A.

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48:3-87.8(d). The Board should follow the Act's mandate and count all energy storage resources towards achievement of New Jersey's goal, regardless of the specific type of resource or when it was installed.

13. How might Federal Energy Regulatory Commission's (FERC) Order 841 and the associated PJM compliance filing affect the foregoing?

On February 7, 2019, the FirstEnergy Utilities², The Dayton Power & Light Company, and East Kentucky Power Cooperative, Inc. (collectively, the "Joint Utilities"), jointly filed their protest and comments in response to PJM's Order 841 compliance filing. In those comments, the Joint Utilities encouraged FERC to require PJM to defer to EDCs, in consultation with affected state commissions, "on implementation and coordination issues at the electric distribution level regarding the PJM ESR Proposal." (Attachment A; Protest and Comments of The FirstEnergy Utility Companies, The Dayton Power and Light Company, and East Kentucky Power Cooperative, Inc., Docket No. ER19-469-000, at p. 3). Specifically, the Joint Utilities pointed out that EDCs have mandates under state law "to deliver reliable and safe electric power to retail customers" and accordingly (with support of their state commissions) "must develop, implement or augment numerous processes, rates, and tariffs that are specific to [energy storage resources]." (*Id.* at 1-2). The Joint Utilities thus supported a "deliberate approach to the large-scale deployment of [energy storage resources] onto the electric distribution system." (*Id.*).

JCP&L's comments herein are consistent with the Joint Utilities' comments and FERC Order 841. Increased deployment of energy storage resources can provide a tremendous benefit to the EDCs' systems and their customers if performed in a deliberate and strategic manner. For this to occur, the EDCs and the Board must work together to develop appropriate policies to encourage further development of energy storage in New Jersey and identify opportunities for strategic implementation that will maximize benefits to the EDCs' customers. Nothing in FERC Order 841 precludes these efforts to further New Jersey's energy storage goals.

JCP&L again thanks the Board for the opportunity to provide comments on these important issues. The Company is happy to assist the Board and Board Staff in any way possible with their preparation of the ESA and looks forward to continuing this cooperative relationship as New Jersey further develops its energy storage policies. Please do not hesitate to contact me if you have any questions or would like to discuss any of JCP&L's above comments.

Very truly yours,



Joshua R. Eckert

Counsel for Jersey Central Power & Light Company

² The FirstEnergy Utilities include JCP&L, Ohio Edison Company, The Cleveland Electric Illuminating Company, The Toledo Edison Company, West Penn Power Company, Pennsylvania Power Company, Pennsylvania Electric Company, Metropolitan Edison Company, Monongahela Power Company, and The Potomac Edison Company.

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

PJM Interconnection, L.L.C.

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Docket No. ER19-469-000

**PROTEST AND COMMENTS OF
THE FIRSTENERGY UTILITY COMPANIES,
THE DAYTON POWER AND LIGHT COMPANY, AND
EAST KENTUCKY POWER COOPERATIVE, INC.**

The FirstEnergy Utility Companies (the “FirstEnergy Utilities”)¹, The Dayton Power and Light Company, and East Kentucky Power Cooperative, Inc. (collectively, the “Joint Parties”)² respectfully submit this Protest and Comments³ in response to PJM Interconnection, L.L.C.’s (“PJM”) Order 841 compliance filing that proposes a new construct to integrate Energy Storage Resources (“ESRs”) into the PJM wholesale markets.⁴ The Joint Parties support the deployment of new and innovative generation resources, such as ESRs, as these resources have the potential to provide numerous benefits and attributes to both the electric transmission and distribution systems. The Joint Parties, however, operate as or serve local electric distribution utilities (“EDUs”) with mandates under State law to deliver reliable and safe electric power to retail customers and, therefore, support a deliberate approach to the large-scale deployment of ESRs onto the electric distribution system.

¹ The FirstEnergy Utility Companies include Ohio Edison Company, The Cleveland Electric Illuminating Company, The Toledo Edison Company, West Penn Power Company, Pennsylvania Power Company, Pennsylvania Electric Company, Metropolitan Edison Company, Jersey Central Power & Light Company, Monongahela Power Company and The Potomac Edison Company.

² Each of the Joint Parties has submitted a separate doc-less motion to intervene in the captioned proceeding.

³ 18 C.F.R. §§ 385.211, 212 (2018).

⁴ *PJM Interconnection, L.L.C.*, Compliance Filing re Order No. 841 ESR Markets and Operations Proposal, Docket No. ER19-469-000 (filed Dec. 3, 2018) (“PJM ESR Proposal”).

The PJM ESR Proposal could facilitate the large-scale integration of ESRs into the PJM wholesale markets; many of which will be interconnected to the electric distribution system. The large-scale integration of ESRs may impact the ability of EDUs to satisfy their mandates under State law to deliver reliable and safe power to retail customers.⁵ As such, the Joint Parties believe that the increasing integration of ESRs into the wholesale markets must be accomplished in a manner that neither threatens the reliability and safety of the electric distribution system nor encroaches upon the States' exclusive jurisdiction to regulate the local electric distribution system under the Federal Power Act ("FPA").⁶

As discussed below, the Joint Parties have identified numerous issues with the PJM ESR Proposal that must be resolved before the large-scale deployment and integration of ESRs at the distribution level can be accomplished in a reliable and safe manner. Specifically, EDUs and their affected State Commissions must develop, implement or augment numerous processes, rates and tariffs that are specific to ESRs. These include, among other things, (i) determining just and reasonable rates for ESR-use of the distribution system; (ii) implementing ESR-specific interconnection standards and technical requirements; (iii) identification of necessary upgrades to reinforce the distribution system due to ESR-interconnection; and (iv) installation of metering infrastructure to account for both the wholesale and retail activity of ESRs.⁷ These unresolved

⁵ In addition to EDUs, other types of entities, including municipalities and electric cooperatives, also have obligations to maintain the reliability and safety of their respective distribution facilities and, thus, may also be impacted by the large-scale integration of ESRs on to the distribution system.

⁶ 16 U.S.C. § 824(b)(1).

⁷ The Joint Parties are aware that the Commission has previously considered and rejected proposals to allow the States and/or local regulatory authorities to decide whether ESRs located behind a retail meter or on the distribution system are eligible to participate in RTO/ISO markets, or adopt an opt-in/opt-out mechanism by which the obligation of RTOs and ISOs to accept bids from ESRs located on a distribution system or behind a retail meter is subject to the decision of the Relevant Electric Retail Regulatory Authority ("RERRA") to permit such participation. *Electric Storage Participation in Markets Operated by Regional Transmission Organization and Independent System Operators*, Order No. 841, 162 FERC ¶ 61,127 at P 35 (2018). That rejection, however, is the subject of a Request for Rehearing of Order 841 that is pending before the Commission. *Request for*

issues and their direct impact on the distribution system demonstrate that the EDUs – not PJM – should take the lead on implementing the PJM ESR Proposal for ESRs that are interconnected at the distribution level. In this primary role, the EDUs can ensure that all distribution level interconnection, operations, metering and rates issues have been addressed prior to finalizing an ESR’s interconnection and participation in the PJM wholesale markets. Moreover, the EDUs can provide guidance on issues related to implementation and develop “lessons learned” that can be applied as increasing amounts of wholesale ESRs (and other distributed energy resources) interconnect to the distribution system.

Accordingly, the Joint Parties request that in ruling on the PJM ESR Proposal, the Commission should (i) direct PJM to defer to EDUs, in consultation with affected State Commissions, on implementation and coordination issues at the electric distribution level regarding the PJM ESR Proposal; (ii) require that PJM ensure that an ESR interconnected at the distribution level has satisfied all EDU interconnection, operational and metering requirements before allowing an ESR participate in the PJM wholesale markets; and (iii) consider, once appropriate retail tariffs are in place, whether to roll out the PJM ESR Proposal on a pilot basis while addressing overarching issues and developing “lessons learned” that can be applied during a wider rollout.

Rehearing of American Municipal Power, Inc., The American Public Power Association and the National Rural Electric Cooperative Association, at 3 (Docket No. RM16-23, *et al.*)(filed March 19, 2018).

I. PROTEST AND COMMENTS

A. THE PJM ESR PROPOSAL WILL HAVE A SIGNIFICANT IMPACT ON THE DISTRIBUTION SYSTEM AND, THEREFORE, LOCAL ELECTRIC DISTRIBUTION UTILITIES MUST PLAY THE PRIMARY ROLE IN INTEGRATING ESRs ONTO THE LOCAL DISTRIBUTION SYSTEM

EDUs have obligations under State law to operate the electric distribution system in a reliable and safe manner. Many of the ESRs that will be developed due to the PJM ESR Proposal will interconnect to the electric distribution system, which could create additional operational and financial issues for EDUs and, as such, directly impact the ability of EDUs to operate the electric distribution system in a reliable and safe manner. Numerous RTOs/ISOs, including PJM, have previously recognized the EDUs obligation and acknowledged that coordination between the RTOs/ISOs, EDUs and State Commissions is essential to the successful integration of wholesale distributed energy resources, such as ESRs, onto the distribution system.⁸ For example, PJM has previously stated to the Commission that:

PJM supports a model that respects the retail role of electric distribution utilities and ensures an orderly and coordinated registration process. Accordingly, PJM requests that the Commission adopt a model clarifying the requirement for “coordination” between the RTO and the electric distribution utility. Absent sufficient clarity around issues including dispute resolution and timing and costs of processes, the standards and criteria associated with ensuring timely DER aggregation registration will remain contentious for RTOs/ISOs, electric distribution providers, DER owners and other interested stakeholders.⁹

The PJM ESR Proposal, however, ignores the potential impact that the large-scale integration of wholesale ESRs may have on the distribution system, as well as the impact the PJM ESR Proposal

⁸ See, e.g., Post-Technical Conference Comments of the California Independent System Operator Corporation, at 13 (Docket No. RM18-9-000) (filed June 26, 2018); Post-Technical Conference Comments of ISO New England Inc., at 4 (Docket No. RM18-9-000) (filed June 26, 2018); Comments of the Midcontinent Independent System Operator, Inc., at 2, 23 (Docket No. RM18-9-000) (filed June 26, 2018) (“MISO Comments”); Post Technical Conference Comments of the New York Independent System Operator, Inc., at 5 (Docket No. RM18-9-000)(filed June 26, 2018); and Post-Technical Conference Comments of PJM Interconnection, L.L.C., at 19 (Docket No. RM18-9-000) (filed June 26, 2018) (“PJM Comments”).

⁹ PJM Comments at 19.

may have on an EDUs' ability to fulfill their obligations to deliver reliable and safe power to retail customers under State law. The PJM ESR Proposal proposes a new market construct that will impact EDUs, State Commissions and, ultimately, customers, yet fails to designate either a direct or indirect role for EDUs and State Commissions in its implementation. Indeed, the Midcontinent Independent System Operator has previously warned the Commission that "DER programing must not be done in haste," and that "DER implementation poses different reliability challenges and requires a higher level of coordination between MISO, states . . . and distribution system operators."¹⁰ Coordination between the RTOs and EDUs is important regarding how ESRs impact both the transmission and distribution system. The EDUs, however, and not PJM, are responsible for maintaining the reliability and safety of the distribution system and, as such, should play the primary role regarding implementation of ESRs onto the distribution system.

Accordingly, EDUs must play the primary role in coordinating the implementation of ESRs that interconnect to the electric distribution system in order to continue to meet the EDUs mandate under State law to reliably and safely operate the electric distribution system.

1. EDUs And State Commissions Must Develop Processes And Standards To Evaluate The Impact That ESRs May Have On The Distribution System

Consistent with their obligation under State law, EDUs must oversee distribution system operations and manage the resources connected to the distribution system. By their very nature, however, ESRs will complicate an EDUs' ability to fulfill its obligation under State law to reliably and safely deliver power to retail customers. Specifically, the distribution system is designed to accommodate one-directional power flow (*i.e.*, toward the load or system sink). By contrast, ESRs are capable of two directional power flows that enable both power injections by ESRs onto the

¹⁰ MISO Comments at 2.

distribution system, as well as traditional energy consumption by ESRs during charging.¹¹ The large-scale deployment of ESRs with two-directional power flow capability on the distribution system will require additional study to understand operational impacts, such as anomalies with voltage regulation and circuit protection, and identify any necessary upgrades or reinforcements to the distribution system. Once processes and standards are revised and/or developed by the EDUs, the processes and standards will then need to be reviewed and approved by the appropriate State Commission. Indeed, PJM itself has previously acknowledged the role that the States play regarding interconnection processes for resources at the distribution level. Specifically, PJM informed the Commission that retail regulators “[d]etermine[] the conditions under which individual DER connect to the distribution system”¹² Nowhere in the PJM ESR Proposal, however, is an acknowledgement that EDUs and State Commissions will need to revise and/or develop processes and standards to reliably and safely integrate large-scale ESRs onto the distribution system.

Accordingly, the EDUs must work with their affected State Commissions to develop and/or revise interconnection processes, standards, and study methodologies regarding the interconnection of wholesale ESRs to the electric distribution system.

a. EDUs Must Develop Revised Interconnection Processes To Ensure The Continued Reliability And Safety Of The Distribution System

If the PJM ESR Proposal is approved, EDUs will need to revise the interconnection processes for ESRs that seek to interconnect to the electric distribution system in order to maintain the reliability and safety of the distribution system. EDUs generally have interconnection

¹¹ The PJM ESR Proposal includes three separate modes of operation for ESRs: (i) Discharge Mode; (ii) Charge Mode; and (iii) Continuous Mode.

¹² PJM Comments at 24.

standards and technical requirements for developers that desire to interconnect to and operate on the distribution system, however, these standards and technical requirements may not be sufficient for ESRs and will need to be revised. ESRs are capable of two-way power flows and, therefore, the ESR-specific interconnection process will require greater scrutiny than other types of generation resources; which could impact interconnection fees, standards, technical requirements, and timelines. Moreover, the PJM ESR Proposal has the potential to facilitate the large-scale deployment of ESRs, and an affected EDU's interconnection processes must be designed to ensure that interconnection studies are addressed and completed in a timely and orderly manner in order to accommodate numerous interconnections requests.

Similar to the PJM interconnection queue, EDU interconnection processes must ensure that ESRs satisfy the EDUs interconnection standards and technical requirements, determine their impact on the distribution system, and what, if any, upgrades or reinforcements are necessary to maintain the reliability and safety of the distribution system. EDUs will also need to establish fees and/or cost schedules to complete interconnection studies. Once an ESR successfully navigates the EDU's interconnection process, only then can its interconnection with the distribution system be finalized, and the ESR participate in the PJM wholesale markets as desired.

Accordingly, EDUs will need to work with affected State Commissions to implement revised interconnection processes to ensure that ESRs conform with all applicable standards in order to allow for the safe, reliable and efficient operation of the distribution system.

b. EDUs Must Develop Revised Interconnection Standards And Technical Requirements To Account For The Unique Characteristics Of ESRs

As stated above, EDUs, in consultation with their affected State Commissions, will need to revise numerous existing practices and policies to implement the PJM ESR Proposal, including revised interconnection standards and technical requirements. ESRs with two-directional power

flows pose a unique challenge compared to other generation interconnection requests and, therefore, EDUs may need to revise and implement new ESR-specific interconnection standards and technical requirements. Revised interconnection standards and technical requirements will ensure that the distribution system can accommodate ESRs and their physical characteristics, such as voltage and frequency levels. The development of revised interconnection standards and technical requirements will be further complicated as EDUs must take into account the various modes of operation for ESRs. Once an ESR has demonstrated that it satisfies an EDU's interconnection standards and technical requirements, the ESR can then move to the next stage of an EDU's interconnection process to determine whether the ESR will have an impact on the distribution system and, what, if any, upgrades or reinforcements are needed to maintain the reliability and safety of the distribution system.

Accordingly, EDUs will need to work with affected State Commissions to implement revised interconnection standards and technical requirements for ESRs, and ensure that ESRs conform with the approved interconnection standards and technical requirements to allow for the safe, reliable and efficient operation of the distribution network.

c. EDUs Must Develop Methodologies To Determine The Impact That ESRs Will Have On The Distribution System

The EDUs will need to perform a distribution system impact study to determine the impact that an ESR will have on the distribution system. The Joint Parties, as part of a larger Coalition of PJM Market Participants, have previously communicated to the Commission that “[EDUs] are best positioned to study those distribution facility impacts, as transmission providers (including RTOs) do not have the information necessary to evaluate distribution system impacts.”¹³ To that end,

¹³ Post-Technical Conference Comments of the PJM Utilities Coalition, at 7 (Docket No. RM18-9-000) (filed June 26, 2018).

EDUs will need to develop or revise study methodologies that are specific to ESRs to govern how the system impact study will be performed. The methodologies must study the impact to the distribution system for an ESR in each of the PJM ESR Proposal's modes of operation. In addition, the EDUs will need to consider the aggregate impact of the ESR along with other ESRs that are already interconnected to the distribution system, as well as other ESRs in the interconnection queue to be interconnected to the distribution system.

Accordingly, EDUs will need to work with affected State Commissions to develop and/or revise methodologies to study the impact that ESRs may have on the distribution system.

d. ESRs Must Pay For Any Necessary Upgrades or Reinforcements That Are Identified In A Distribution System Impact Study

The EDUs will conduct a distribution system impact study to determine the impact that an ESR may have on the electric distribution system. If the EDU determines that an ESR will have no impact on the distribution system and, thus, no upgrades or reinforcements are necessary, the ESR's interconnection to the distribution system can be finalized and the ESR can begin to participate in the PJM wholesale markets. If, however, the EDU determines that the interconnection of an ESR will impact the distribution system and that upgrades or reinforcements are necessary to maintain reliability and safety, then those upgrades or reinforcements will need to be completed and paid for by the interconnecting-ESR before the interconnection can be finalized. This is consistent with Commission precedent regarding principles of cost-causation,¹⁴ as well as the existing practice in the PJM interconnection queue for wholesale generators that desire to interconnect with the transmission system.¹⁵ Moreover, it would be unjust and unreasonable for

¹⁴ *Cal. Power Exch. Corp.*, 106 FERC ¶ 61,196 at P 17 (2004) (costs are to be allocated to customers based on customer benefits and cost incurrence); *Penn. Elec. Co. v. FERC*, 11 F.3d 207, 211 (D.C. Cir. 1993) (“customers should normally be charged rates that fairly track the costs for which they are responsible”).

¹⁵ PJM Open Access Transmission Tariff, Section 217.

retail customers to bear the costs of upgrades or reinforcements to the distribution system in circumstances where another class of customers is causing the costs.

Accordingly, EDUs will need to work with affected State Commissions to establish processes, rates and tariffs regarding cost allocation for upgrades or reinforcements to the distribution system that are required to maintain reliability and safety due to an ESR-interconnection.

2. Retail Customers Have Paid for the Construction and Operation of the Distribution System and, Therefore, it Would Not Be Just and Reasonable to Allow ESRs to Utilize the Distribution System Without Paying to Use the System

The EDUs have designed and constructed the existing distribution system to fulfill their obligation under State law to deliver reliable and safe power to retail customers, including sufficient distribution system network capacity (or “headroom”) to meet retail customer demand. Retail customers of the EDUs have paid for the construction and operation of the distribution system and, as such have priority over use of the distribution system. Under the PJM ESR Proposal, wholesale ESRs that are interconnected to the distribution system will need to utilize available “headroom” on the distribution system to get their power to their wholesale customers. The distribution system, however, was not designed or constructed to facilitate the deliverability of wholesale ESRs to wholesale customers. ESRs that seek to participate in the PJM wholesale markets do not, by virtue of FERC-mandate (*i.e.*, Order 841) or the PJM ESR Proposal, have a right to utilize the distribution system or to consume available headroom on the distribution network. Retail customers, not wholesale ESRs, paid for the construction and operation of the distribution system and, as such, it would not be just and reasonable to allow wholesale ESRs to

utilize the distribution system and available “headroom” without establishing interconnection fees and retail tariffs and rates for ESRs for use of the distribution system.¹⁶

Accordingly, the EDUs and their respective State Commissions will need to hold proceedings for the purposes of, among other things, updating and/or establishing retail tariffs to provide for interconnection fees and charges for ESRs that desire to interconnect with and utilize the distribution system.

3. The PJM ESR Proposal Ignores Numerous Metering Issues That Must Be Resolved to Successfully Integrate The Large-Scale Integration of ESRs On To The Distribution System

The PJM ESR Proposal leaves numerous issues unresolved regarding metering that must be addressed before the large-scale integration of ESRs into the PJM wholesale markets and into the distribution system. Multiple RTOs, including PJM, have previously acknowledged the important role that advanced and accurate metering will have regarding the successful implementation of distributed energy resources, such as ESRs, into the wholesale markets and onto the distribution system.¹⁷ Metering issues that will need to be addressed include, among other things, installing separate metering infrastructure to account for the wholesale market activity and retail load of each individual ESR, metering testing obligations, metering ownership, metering maintenance, data collection, and cost recovery. The PJM ESR Proposal will require extensive coordination between EDUs and PJM regarding data collection and metering installation for ESRs. Moreover, EDUs will need to work with State Commissions to develop and/or revise processes,

¹⁶ Affected State Commissions will need to establish just and reasonable rates for ESR-interconnection and usage of the electric distribution system. Those retail rates and tariffs, however, fall under the States’ exclusive jurisdiction under the FPA and, as such, fall outside the scope of this proceeding.

¹⁷ See PJM Comments at 25; MISO Comments at 19.

rates and tariffs regarding the development of ESR-metering infrastructure and policies regarding data collection, metering testing and maintenance.¹⁸

Once those metering issues are resolved between the EDUs, State Commissions, and PJM, the PJM ESR Proposal may be implemented in a manner that promotes market efficiency and minimizes threats to the reliability and safety of the distribution system.

B. THE PJM ESR PROPOSAL DOES NOT ADDRESS RETAIL JURISDICTIONAL ISSUES AND, ACCORDINGLY, THERE IS A NEED FOR FERC TO REVIEW THE “COOPERATIVE FEDERALISM” PRINCIPLES THAT CONTROL FOR ESRs THAT PARTICIPATE UNDER PJM’S ESR TARIFF.

The PJM ESR Proposal could disrupt the “cooperative federalism” that has existed between the Commission and the States regarding wholesale market design issues and their corresponding impacts on the distribution system.¹⁹ While ostensibly a markets filing that falls under the Commission’s exclusive jurisdiction regarding wholesale transactions under the FPA, the PJM ESR Proposal in fact will have a direct impact on the electric distribution system, which falls under the exclusive jurisdiction of the States.²⁰ As demonstrated above, the increasing deployment of ESRs, and other wholesale supply-side resources, on local distribution facilities poses an increasing operational and financial burden on these facilities. These increasing financial and operational burdens, in turn, may complicate EDUs and affected State Commissions’ efforts to maintain the reliability and safety of the distribution system and, thus, raises the question whether the PJM ESR Proposal encroaches upon the State’s exclusive jurisdiction regarding local distribution facilities. Indeed, and as demonstrated below, the FPA empowers the Commission with broad, exclusive authority regarding wholesale markets and the transmission system,

¹⁸ State Commissions may also need to review and update Net Metering tariffs in order to accommodate ESR interconnection.

¹⁹ See note 5, *supra*.

²⁰ See note 4, *supra*, regarding the potential for ESR-deployment on non-jurisdictional munis and co-op systems.

however, local distribution facilities fall under the exclusive jurisdiction of the States and efforts to extend the Commission's jurisdiction and PJM's responsibilities over the distribution system, however unintended or inadvertent such extension may be, must be rejected.

Accordingly, the Joint Parties respectfully request that the Commission take this opportunity to reaffirm its existing guidance regarding the roles of the EDU, the State Commissions and PJM regarding supply-side resources that are deployed on local distribution facilities. Specifically, and to avoid the potential for ambiguity, the Commission should take this opportunity to clarify that deployment of ESRs (and other supply-side resources) on local distribution facilities must be subordinate to and not impinge on, the operation and use of those facilities to provide service to retail customers. And the Commission further should clarify that, while ESRs (and other supply-side resources) may procure transmission service over local distribution facilities, the procurer of such service is subject to paying any and all incremental costs that are or may be required in order to provide such service as described herein. Further, if and to the extent that ESRs (or other supply-side resources) desire to procure "firm" transmission service over local distribution facilities, the Commission should affirm that such resources pay the costs to "enlarge" the local distribution facilities to accommodate such service. And, in the event that supply-side resources are not willing to pay for "firm" service, then they must be prepared for interruptions if and as needed by the EDU to deliver adequate and reliable retail service to end-use customers.

1. Statutory Background

Section 201(b) of the Federal Power Act, among other things, endows the Commission with jurisdiction over transmission facilities, but reserves to the States jurisdiction over local distribution facilities. As such, the Commission has jurisdiction over "transmission facilities" but not over "local distribution facilities." Nonetheless, at times transmission service is provided over

local distribution facilities. If and when this happens, the Commission has jurisdiction to regulate the transmission service, but not the local distribution facilities themselves. And, because the States and not the Commission have final control over local distribution facilities, any Commission-jurisdictional transmission transactions that occur on local distribution facilities can occur only if and to the extent that they do not impinge on or displace or affect the reliability of the local distribution facilities, or the EDU's use of the local distribution facilities to serve retail customers. Transmission customers that want "firm" transmission service over local distribution facilities must be prepared to pay the entire cost of "enlarging" the facilities to provide the requested firm transmission service. If and to the extent that a given transmission customer or group of customers is not willing to pay for such upgrades, then they must be prepared to take transmission service on terms and conditions that recognize the priority of local distribution service to retail customers.

2. The Commission Properly Recognizes The Jurisdictional Difference Between Transmission Facilities And Local Distribution Facilities

In Order 2003-C, the Commission noted that Section 201(b) of the Federal Power Act gives the Commission authority to regulate all facilities used for transmission and for wholesale sales, but that the same section denies jurisdiction to the Commission over local distribution facilities.²¹ The Commission explained that, because wholesale transactions such as wholesale sales or transmissions may occur on local distribution facilities, the Commission may regulate the rates, terms and conditions of the wholesale transaction that occurs on the local distribution facility, but that the Commission may not regulate the local distribution facility itself.²² The Commission

²¹ FERC Docket No. RM02-1, *Standardization of Generation Interconnection Agreements and Procedures*, Order No. 2003-C, 111 FERC ¶ 61,401, at P 52 (2005).

²² *Id.* at P 53.

further noted that its reasoning was consistent with the D.C. Circuit's 2003 *Detroit Edison* decision.²³

The Commission's analysis is consistent with the U.S. Supreme Court's pronouncements about the jurisdictional divide between the Commission and the States. For example, in 1945, the Supreme Court held that state jurisdiction over local distribution facilities must be given effect, and that any attempt to read the statute in such a way as to confer jurisdiction over local distribution facilities on the Commission would be contrary to Congressional intent to leave these facilities subject to state control.²⁴ Later, in 1972, the Court added that, notwithstanding the physical flow of electrons, federal jurisdiction may not reach local distribution facilities.²⁵

In 1992, Congress amended the Federal Power Act. Importantly, in the 1992 amendments recognized that transmission service could be provided over local distribution facilities, but that while such service was jurisdictional to the Commission, the state still retained jurisdiction over the local distribution facilities themselves. Specifically, in the 1992 amendments to the Federal Power Act, Congress required jurisdictional public utilities to provide transmission service over local distribution facilities in certain circumstances.²⁶ As such, Congress recognized that jurisdictional utilities – such as EDUs – can provide transmission service over local distribution facilities, but Congress did not transfer jurisdiction over the facilities themselves to the Commission.

²³ *Id.* at P 52, citing *Detroit Edison Co. v FERC*, 334 F.3d 48, 51 (D.C. Cir. 2003). The *Detroit Edison* case is notable in that two of the three judges on that panel also were on the *TAPS v. FERC* panel (**insert cite**) and, as such, the *Detroit Edison* decision can be considered controlling as between the two cases with regard to the scope of the Commission's jurisdiction over local distribution facilities.

²⁴ *Connecticut Light & Power v FPC*, 324 U.S 515, 531 (1945).

²⁵ *FPC v Florida Power & Light*, 404 U.S 453, 467 (1972).

²⁶ Compare FPA Section 211 (Commission-jurisdictional utilities required to provide transmission service) and FPA Section 211A (non-jurisdictional utilities required to provide transmission service unless the facilities are local distribution facilities).

In the 1994 *Tex-La* decision, a case that came out of the 1992 amendments to the Federal Power Act, the Commission noted that while Section 201(b) of the Federal Power Act limited the Commission’s jurisdiction over local distribution facilities, the Commission could require utilities to provide transmission service over such facilities in certain circumstances.²⁷ The Commission’s *Tex-La* decision was based on Section 211 of the Federal Power Act; which was added in the 1992 amendments.

3. Transmission Customers May Be Required To Pay For Upgrades To Local Distribution Facilities If And As Necessary To Provide Transmission Service Over Such Facilities

The Commission’s citation, in its *Tex-La* decision, to Section 211 of the Federal Power Act is useful in that Section 211, directly and by implication, establishes the conditions that are in play if there is a request for transmission service to be provided over local distribution facilities. First, the transmission customer may be required to pay to enlarge the facilities as necessary to provide the requested transmission service.²⁸ Important here is that the term “enlarge” is not limited to the interconnection facilities alone as “enlargement” – that is, system reinforcements – may be required in order for the local distribution system to provide the requested service.

Next, Section 211(b) provides that the transmission service may not unreasonably impair the continued reliability of the affected local distribution facilities. The phrase “*continued reliability*” speaks directly to reliability, as well as by implication to the fact that the affected facilities must continue to be able to provide the service for which they originally were constructed and for which they are being used and planned to be used before the transmission service was requested. That is, the Section 211(b) requirement that transmission service across local

²⁷ FERC Docket No. Tx94-4, *Tex-La Electric Cooperative of Texas*, 67 FERC ¶ 61,019 at 61,055-56 (1994).

²⁸ FPA § 211(a).

distribution facilities “not unreasonable impair the continued reliability” of those facilities means that the transmission service must be subordinate to and of secondary consideration of the primary and preexisting use of the facilities; which is for local distribution service.

Given the statutory recognition that there may be a need to “enlarge” a local distribution facility to accommodate a requested transmission service, it follows that the affected transmission customer has two choices: (i) pay to upgrade the facility into a Commission-jurisdictional transmission facility; or (ii) expand the local distribution facility capacity so that transmission flows can be accommodated on the local distribution facility. In the event that a transmission customer selects the latter choice – expand a local distribution facility so that it can accommodate transmission – the “primary” function of the facilities will continue to be to provide distribution service to retail customers.

In cases where the primary function of the local distribution facility is and continues to be to provide distribution service to retail customers, it follows that to the extent that an ESR or other supply-side resource is participating in an organized wholesale market by taking service (in whole or part) over a local distribution facility, such participation must be on terms that recognize that the primary function of the facilities is to provide local distribution service, and that the EDU – and not the RTO – will control and schedule the local distribution facility as necessary to serve its distribution customers. It further follows that transmission customers that want “firm” transmission service over the affected local distribution facilities will need to pay for the upgrades (enlargements) necessary to obtain such service. If the customer is not willing to pay for such service, then it follows that the customer’s transmission service may be curtailed if and when there is a need for such curtailment in order to maintain the continued reliability of distribution service to the EDU’s retail customers. In any event, the EDU – and not the RTO – will control the local

distribution facilities that run from the supply-side resource to the point of delivery into the wholesale market.

II. CONCLUSION

For the reasons set forth herein, the Joint Parties respectfully request that in ruling on the PJM ESR Proposal, the Commission should (i) direct PJM to defer to EDUs, in consultation with affected State Commissions, on implementation and coordination issues regarding the ESR Proposal; (ii) require that PJM ensure that an ESR interconnected at the distribution level has satisfied all EDU interconnection, operational and metering requirements before allowing an ESR to participate in the PJM wholesale markets; and (iii) consider, once appropriate retail tariffs are in place, whether to roll out the PJM ESR Proposal on a pilot basis while addressing overarching issues as suggested above.

Respectfully submitted,

/s/ Evan K. Dean

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Date: February 7, 2019

CERTIFICATE OF SERVICE

I hereby certify that the foregoing Protest and Comments of The FirstEnergy Utility Companies, The Dayton Power and Light Company, and East Kentucky Power Cooperative, Inc. have been served upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated this 7th day of February, 2019.

/s/ Evan K. Dean

Evan K. Dean